WHAT IS CLAIMED IS:

1. A semiconductor transistor comprising:

a gate having a sidewall portion and a top portion, said gate structure formed on a substrate;

a dielectric spacer formed over the substrate, said dielectric spacer forming an L-shape comprising a vertical portion parallel to the sidewall portion, and a horizontal portion approximately orthogonal to the sidewall portion of the gate structure;

a first source/drain region in the substrate, wherein the first source/drain region formed underneath the horizontal portion of the L-shaped dielectric spacer the first source/drain region having a first average depth; and

a second source/drain region in the substrate, wherein the second source/drain region is immediately adjacent to the first source/drain region , the second source/drain region having a second average depth greater than the first average depth.

2. The semiconductor transistor of Item 1 wherein said L-shaped dielectric spacer is a nitride.

3. The semiconductor transistor of Item 1, wherein said vertical and horizontal portions of L-shaped dielectric spacers have a bulging profile in which the horizontal portion of the L-shaped dielectric spacers have a bulging profile which varies gradually in thickness from a maximum thickness immediately adjacent the vertical portion of the L-shaped dielectric spacer to a portion of the L-shaped spacer furthest from the vertical-portion of the L-shaped dielectric spacer, wherein the horizontal portion varies gradually to provide for an average thickness of the L-shaped portion that is, 50 to 85 percent of the maximum thickness.

4. The semiconductor transistor of Item 1 wherein the first source/drain region and the second source/drain region are of a common conductivity type.

5. The semiconductor transistor of Item 4, wherein the first conductivity type is selected from a group of P-type conductivity and an N-type conductivity.

6. A method of fabricating a semiconductor transistor comprising the steps of:
providing a gate structure having a sidewall portion and a top portion, said gate structure formed on a substrate;
forming a dielectric spacer formed over the substrate, said dielectric spacer forming an L-shape comprising a vertical portion parallel to the sidewall portion, and a horizontal portion approximately orthogonal to the sidewall portion of the gate structure;
forming a first source/drain region in the substrate using an implant species, wherein the first source/drain region formed underneath the horizontal portion of the L-shaped dielectric spacer; and
forming a second source/drain region in the substrate using the implant species, wherein the second source/drain region is immediately adjacent the first source/drain region and has a depth greater than a depth of the first source/drain region..

7. The method of Item 6, further including a step of forming a liner oxide over said gate structure prior to the step of forming the dielectric spacer.

8. The method of Item 6, wherein the implant species for P-type conductivity is selected from a group including boron, indium, and boron difluoride.

9. The method of Item 6, wherein an ion implantation energy for a boron implant is in the range from approximately 5 keV to 15 keV and ion dose is in the range from about le13/cm^2 to le15/cm^2.

10. The method of Item 6, wherein the implant species for N-type conductivity is selected from a group including arsenic, phosphorus, and antimony.

11. The method of Item 6, wherein the ion implantation energy for an arsenic implant in the range of from about 10 keV to about 100 keV and ion dose is in the range from about le13/cm^2 to le15/cm^2.

12. The method of Item 6 wherein said L-shaped dielectric spacer is a nitride.

13. The method of Item 6 wherein the length of the horizontal portion of the L-shaped dielectric spacer ranges from about 200 Angstroms to about 500 angstroms.

14. A method of fabricating a semiconductor transistor comprising the steps of:

forming a source/drain extension having an average extension depth

forming a first portion of a source/drain region having a first average depth and a first length;

forming a second portion of the source/drain region simultaneously in time with the first portion, wherein the second portion has a second average depth and a second length, wherein the second average depth is greater than the first average depth, and the first average depth is greater than the average extension depth.